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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/516,464	12/28/2004	Takashi Matsuda	28951.2183	2872
27890	7590	02/10/2006	EXAMINER	
STEPTOE & JOHNSON LLP 1330 CONNECTICUT AVENUE, N.W. WASHINGTON, DC 20036			VIDWAN, JASJIT S	
			ART UNIT	PAPER NUMBER
			2182	

DATE MAILED: 02/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/516,464

Applicant(s)

MATSUDA ET AL.

Examiner

Jasjit S. Vidwan

Art Unit

2182

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2/3/06.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

Claims 1-15 are pending

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Harari et al. U.S. Patent No: 5,887,145 (herein after *Harari*).

3. **As per claim 1**, Harari teaches a card adapter [Fig. 3, element 10, “mother board”] used to couple a compact memory card [Fig. 3, element 20, “daughter card”] compliant with a second specification [Fig. 1, Element 200, “Host System”] to a CF card slot compliant with a CompactFlash Association Standard or a first specification [Fig. 1, Element 20, “Removable daughter”], the card adapter comprising a circuit board and a card case [Fig. 8A, element 10], The circuit board including:

- a. A first connector compliant with the first specification [Fig. 3, Element 12]
- b. A second connector compliant with the second specification [Fig. 3, Element 14]; and
- c. A signal processing circuit [Fig. 3, Element 40] connected to a first connector and the second connector to convert signals between the first specification and the second specification [Col. 7, Lines 48-63]; and
- d. The card case accommodating the circuit board and including:

- i. An inlet for the compact memory card at right angle to an insertion direction of the card slot compliant with the first specification [Fig. 8A, element 70]
- ii. Wherein a holder for the compact memory card is formed of a housing of the second connector and the card case, and the card case is used as a top portion of the holder [Fig. 8B, element 20, 70, 80, 82, 14] and the circuit board is used as the bottom portion of the holder [Fig. 2B, element 19]

4. **As per claim 10** Harari teaches a system wherein circuit board connects the first connector and the second connector electronically [see Harari Fig. 3, element 40] and mounts a circuit to convert a pin arrangement [see Harari Fig. 7, element 41]

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harari as applied to claim 1 above, and further in view of Mizutani et al U.S. Patent No: 5,777,275 (herein after *Mizutani*).

6. **As per claim 2**, Harari teaches the limitations of claim 1, in addition to circuit board wherein the circuit board mounts the first connector [Fig. 3, Element 12], the second connector [Fig. 3, Element 14], and the signal processing circuit [Col. 7, Lines 48-63], in the same surface [Fig. 2b].

Harari fails to teach a system wherein the circuit board has a foldable surface. However, Mizutani teaches a system wherein there exists a foldable surface [see Mizutani, Fig. 1, Element 3b], in order to effectively increase the areas of the flat portions of the circuit board [Col. 2, Lines 9-11].

One of ordinary skill in the art at the time of applicant's invention would have clearly recognized that it is quite advantageous to include a circuit board that includes the functionality of being able to fold within itself in order to reduce the space restrictions of more compact adapter. It is for this reason that one of ordinary skill in the art would have been motivated to combine Harari's teachings with that of Mizutani in order to take advantage of providing a smaller and more compact memory card adapter.

7. **As per claim 3**, Harari teaches the limitations of claim 1 wherein the card adapter includes a circuit board that comprises a first connector [Fig. 3, Element 12], a second connector [Fig. 3, Element 14], and signal processing circuit [Col. 7, Lines 48-63].

Harari fails to teach a system wherein the above circuit board is broken down into a main board, sub-board and a flexible bend to insert into the card holder, and the main board and sub-board faces each other in the card case. However, Mizutani teaches a circuit board where the above circuit (first connector, second connector and a signal processing circuit) can be broken down into two boards; main board [see Mizutani, Fig. 4, Element 1a] and sub-board [see Mizutani, Fig. 4, Element 1b] with a flexible bend [see Mizutani, Fig. 3, Element 3] to connect main board and the sub-board, and is folded at the flexible bend to insert into the card holder [see Mizutani, Fig. 3, Element 3], and the main

board and the sub-board faces each other in the card case [see Mizutani, Fig. 3, elements 1a-1b]

One of ordinary skill in the art at the time of applicant's invention would have clearly recognized that it is quite advantageous to include a circuit board that includes the functionality of being able to fold within itself in order to reduce the space restrictions of more compact adapter. It is for this reason that one of ordinary skill in the art would have been motivated to combine Harari's teachings with that of Mizutani in order to take advantage of providing a smaller and more compact memory card adapter.

8. **As per claim 4**, Harari teaches the limitations of claim 1 in addition to a card adapter wherein the first connector and the second connector are connected via the signal processing circuit [see Harari, Fig. 3 elements 12, 14, 40].

Harari fails to teach an adapter wherein the first connector and the second connector are located on one board whereas the signal processing circuit is located on another. However, Mizutani teaches the limitations wherein:

e. The sub-board mounts the first connector and the second connector in a same surface [see Mizutani, Col. 4, Lines 23-28].

f. Main board mounts the signal processing circuit in the same surface [see Mizutani, Fig. 5 elements 2a].

One of ordinary skill in the art at the time of applicant's invention would have clearly recognized that it is quite advantageous to include a circuit board that includes the functionality of being able to fold within itself in order to reduce the space restrictions

of more compact adapter. It is for this reason that one of ordinary skill in the art would have been motivated to combine Harari's teachings with that of Mizutani in order to take advantage of providing a smaller and more compact memory card adapter.

9. **As per claim 5**, Teachings of Harari as modified by the teachings of Mizutani as applied above in claim 3, teach a card adapter wherein at least one of the main board and the sub-board in a folded structure has an opening equal to or wider than the holder in a portion corresponding to the holder [see Mizutani, Fig. 3, There exists a considerable distance between boards 1a and 1b].

10. **As per claim 6**, Teachings of Harari as modified by the teachings of Mizutani as applied above in claim 3, teach a card adapter wherein the main body is L-shaped and is positioned on the second connector housing when the main board is folded [see Mizutani, Fig. 5, element 1b].

11. **As per claim 7**, Teachings of Harari as modified by the teachings of Mizutani as applied above in claim 3, teach a card adapter wherein the holder is formed between one surface of the card case and the sub-board [see Mizutani, Fig. 4, element 3].

12. **As per claim 8**, Teachings of Harari as modified by the teachings of Mizutani as applied above in claim 3, teach a card adapter wherein the holder is formed by one surface of the card case, the sub-board and the housing of the second connector [see Mizutani, Fig. 4, element 3].

13. **As per claim 9**, Harari teaches the limitations of claim 1 wherein the card adapter includes a circuit board that comprises a first connector [Fig. 3, Element 12], a second connector [Fig. 3, Element 14], and signal processing circuit [Col. 7, Lines 48-63]

Harari fails to teach a system wherein housing of the second connector holds a distance between the main board and the sub-board facing each other. However, Mizutani teaches a system wherein the main board and sub-board when folded will still maintain a distance from the second connector. Using Mizutani's teaching of folding the signal processor circuit (main board) with first connector (sub-board) [see Mizutani, Fig. 3]. Looking back at Harari's system [see Harari, Fig. 3], it would be obvious to one skilled in the art folding signal processor circuit [see Harari, Fig. 3, element 40] and first connector [see Harari, Fig. 3, element 14] would still maintain a relevant distance from the second connector.

One of ordinary skill in the art at the time of applicant's invention would have clearly recognized that it is quite advantageous to include a circuit board that includes the functionality of being able to fold within itself in order to reduce the space restrictions of more compact adapter. It is for this reason that one of ordinary skill in the art would have been motivated to combine Harari's teachings with that of Mizutani in order to take advantage of providing a smaller and more compact memory card adapter.

14. **As per claim 11**, Harari teaches a card adapter [Fig. 3, element 10, "mother board"] used to couple a compact memory card [Fig. 3, element 20, "daughter card"] compliant with a second specification [Fig. 1, Element 200, "Host System"] to a CF card slot compliant with a CompactFlash Association Standard or a first specification [Fig. 1, Element 20, "Removable daughter"], the card adapter comprising a circuit board and a card case [Fig. 8A, element 10], The circuit board including:

A first connector compliant with the first specification [Fig. 3, Element 12]



A second connector compliant with the second specification [Fig. 3, Element 14];  
and

A signal processing circuit [Fig. 3, Element 40] connected to a first connector and  
the second connector to convert signals between the first specification and the  
second specification [Col. 7, Lines 48-63]; and

The card case accommodating the circuit board and including:

An inlet for the compact memory card at right angle to an insertion direction of  
the card slot compliant with the first specification [Fig. 8A, element 70]

A holder wherein the circuit board mounts the first connector [Fig. 3, Element 12],  
the second connector [Fig. 3, Element 14], and the signal processing circuit [Col. 7, Lines  
48-63], in the same surface [Fig. 2b, element 18].

Harari fails to teach a system wherein the circuit board has a foldable surface in  
addition to a card case wherein the surface mounted with the signal processing circuit is  
appressed to a circuit board support provided on a housing of the second connector to  
keep a distance between both of the folded circuit boards in a prescribed dimension.  
However, Mizutani teaches a system wherein there exists a foldable surface [see  
Mizutani, Fig. 1, Element 3b], in order to effectively increase the areas of the flat portions of  
the circuit board [see Mizutani Col. 2, Lines 5-11]. Also, Mizutani goes further to teach a  
card case where the circuit board support is provided on a housing of the second  
connector to keep a distance between both of the folded circuit boards in a prescribed  
dimension [see Mizutani Fig. 3, There exists a considerable distance between boards 1a and 1b].

One of ordinary skill in the art at the time of applicant's invention would have clearly recognized that it is quite advantageous to include a circuit board that includes the functionality of being able to fold within itself in order to reduce the space restrictions of more compact adapter. It is for this reason that one of ordinary skill in the art would have been motivated to combine Harari's teachings with that of Mizutani in order to take advantage of providing a smaller and more compact memory card adapter.

15. **As per claim 12 and 15**, Teachings of Harari as modified by the teachings of Mizutani as applied above in claim 11, teach a card adapter wherein circuit board connects the first connector and the second connector electronically [see Harari Fig. 3, element 40] and mounts a circuit to convert a pin arrangement [see Harari Fig. 7, element 41]

16. **As per claim 13**, Harari teaches a card adapter [Fig. 3, element 10, "mother board"] used to couple a compact memory card [Fig. 3, element 20, "daughter card"] compliant with a second specification [Fig. 1, Element 200, "Host System"] to a CF card slot compliant with a CompactFlash Association Standard or a first specification [Fig. 1, Element 20, "Removable daughter"], the card adapter comprising a circuit board and a card case [Fig. 8A, element 10], The circuit board including:

A first connector compliant with the first specification [Fig. 3, Element 12]

A second connector compliant with the second specification [Fig. 3, Element 14];

and

A signal processing circuit [Fig. 3, Element 40] connected to a first connector and the second connector to convert signals between the first specification and the second specification [Col. 7, Lines 48-63]; and

The card case accommodating the circuit board and including:

An inlet for the compact memory card at right angle to an insertion direction of the card slot compliant with the first specification [Fig. 8A, element 70]

A holder wherein the circuit board mounts the first connector [Fig. 3, Element 12], the second connector [Fig. 3, Element 14], and the signal processing circuit [Col. 7, Lines 48-63], in the same surface [Fig. 2b, element 18].

Harari fails to teach a system wherein the circuit board has a structure that enable the boards to fold until both the circuit boards face each other. In addition, Harari fails to teach a card case wherein the circuit board in a folded structure where the both circuit boards face each other is bonded to the card case using an insulating adhesives to keep a distance between both of the folded circuit boards in a prescribed dimension. However, Mizutani teaches a system wherein there exists a foldable surface [see Mizutani, Fig. 3, element 3], in order to effectively increase the areas of the flat portions of the circuit board [Col. 2, Lines 9-11]. Also, Mizutani goes further to teach a card adapter where the main board is bonded inside of the top surface via an insulating adhesive layer and the sub-board inside of the bottom surface via the adhesive layer [See Mizutani, Col. 3, Lines 19-29].

One of ordinary skill in the art at the time of applicant's invention would have clearly recognized that it is quite advantageous to include a circuit board that includes

the functionality of being able to fold within itself in order to reduce the space restrictions of more compact adapter. One of ordinary skill in the art would have also recognized the need to add insulating adhesive layer on both the main and sub-boards in order to prevent electrical disrupt when the boards are in extremely close proximity of one another in the folded stage. It is for this reason that one of ordinary skill in the art would have been motivated to combine Harari's teachings with that of Mizutani in order to take advantage of providing a smaller and more compact memory card adapter and prevent shortage of the electrical system.

17. **As per claim 14**, Teachings of Harari as modified by the teachings of Mizutani as applied above in claim 13, wherein the card adapter includes a circuit board that comprises a first connector [Fig. 3, Element 12], a second connector [Fig. 3, Element 14], and signal processing circuit [Col. 7, Lines 49-64]. In addition, Harari teaches a card case that has a top surface [Fig. 2B, element 10] and a bottom surface [Fig. 2B, element 14]

Harari fails to teach a card adapter wherein the main board is bonded inside of the top surface via an insulating adhesive layer and the sub-board is bonded inside of the bottom surface via the adhesive layer. However, Mizutani teaches a card adapter where the main board is bonded inside of the top surface via an insulating adhesive layer and the sub-board inside of the bottom surface via the adhesive layer [See Mizutani, Col. 3, Lines 19-29].

One of ordinary skill in the art at the time of applicant's invention would have clearly recognized that it is quite advantageous to include a circuit board that includes the

functionality of being able to fold within itself in order to reduce the space restrictions of more compact adapter. One of ordinary skill in the art would have also recognized the need to add insulating adhesive layer on both the main and sub-boards in order to prevent electrical disrupt when the boards are in extremely close proximity of one another in the folded stage. It is for this reason that one of ordinary skill in the art would have been motivated to combine Harari's teachings with that of Mizutani in order to take advantage of providing a smaller and more compact memory card adapter and prevent shortage of the electrical system.

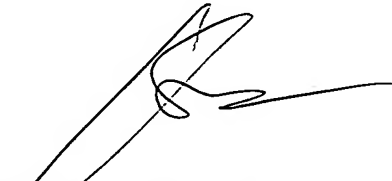
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jasjit S. Vidwan whose telephone number is (571) 272-7936. The examiner can normally be reached on 8am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, KIM HUYNH can be reached on (571) 272-4147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JSV  
2-3/06



**KIM HUYNH**  
**SUPERVISORY PATENT EXAMINER**  
2/4/06